ORIGINAL

BEFORE THE
Federal Communications Commission
WASHINGTON, DC 20554

In the Matter of	)	
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U S WEST, INC.	)	CC Docket No. 94-102
	)	RM-8143
Petition for Waiver of Section 20.18(c) of the Commission's Rules for Digital Wireless Systems	)	
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To: Chief, Wireless Telecommunications Bureau

U S WEST, INC.
PETITION FOR WAIVER OF SECTION 20.18(c) OF THE RULES FOR DIGITAL WIRELESS SYSTEMS

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December 4, 1998

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SUMMARY

Pursuant to the Wireless Telecommunications Bureau Order of November 13, 1998 and 47 C.F.R. § 1.3, U S WEST, Inc. on behalf of its wireless affiliate, U S WEST Wireless, LLC, petitions the Bureau for waiver of Section 20.18(c) of the rules. U S WEST demonstrates its commitment to and plans for complying with Section 20.18(c) of the rules. It discusses the fundamental technological barriers to carrying TTY calls over digital networks and issues concerning the achievability of potential voice and data-based solutions pursuant to Section 255. As discussed herein, currently there are no technically feasible and commercial available TTY solutions usable by U S WEST.

Based on review of available materials and discussions with its vendors, U S WEST includes information concerning the possible feasibility of potential TTY devices and solutions with respect to its digital network and provides presently available information concerning potential timetables and milestones for compliance. As requested by the Bureau, U S WEST also discusses the "consumer concerns" referenced in the September 30, 1998 Order.

U S WEST demonstrates herein that it has satisfied the requirements for grant of the requested waiver; it also confirms its intention to file periodic reports to indicate progress made towards implementation of TTY digital capability and to maintain its requested waiver.

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To: Chief, Wireless Telecommunications Bureau

U S WEST, INC.
PETITION FOR WAIVER OF SECTION 20.18(c) OF THE RULES FOR DIGITAL WIRELESS SYSTEMS

Pursuant to the Wireless Telecommunications Bureau's *Order* of November 13, 1998 and Section 1.3 of the rules, U S WEST, Inc. ("U S WEST"), on behalf of its affiliate U S WEST Wireless, L.L.C. ("USWW"),[1] hereby petitions the Bureau for waiver of Section 20.18(c) of the Commission's rules in regard to its digital system, effective January 1, 1999.[2] By this filing, U S WEST demonstrates its "commitment to, and plans for, complying with Section 20.18(c)" of the rules. Furthermore, at present, there are fundamental technological barriers to carrying TTY calls over digital networks such that providing such capability is not readily achievable pursuant to Section 255. Pursuant to the *November 13 Order*, U S WEST will supplement the instant Petition with

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1 USWW is a D/E block broadband PCS licensee in over 50 BTA markets.

2 *See* 47 C.F.R. § 1.3; *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, Order*, CC Docket No. 94-102, DA 98-2323, ¶¶ 11-12 (rel. November 13, 1998) ("*November 13 Order*").

additional responsive information that may become available, including information from vendors, every three months to indicate progress made toward implementation of TTY digital capability and to maintain the instant waiver.[3]

INTRODUCTION

The Commission has acknowledged that "users of TTY devices will not be able to operate such devices in conjunction with digital phones at any time in the near future."[4] Indeed, U S WEST submits that the record in this proceeding demonstrates that the Commission has had considerable notice that implementing a backward compatible solution for digital TTY capability will be extremely difficult if not technically infeasible.[5] Carriers' TTY/911 obligations also are uncertain, as the Commission's actions and prior insistence on backward-compatibility solutions appear to conflict with the Access Board's guidelines and Section 255 of the Communications Act.[6] Further

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3 *November 13 Order* at ¶ 11.

4 *Id.* at ¶ 7.

5 *See Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, Reconsideration Order*, 12 FCC Rcd. 22,665, 22,687-94 (1997) (*"E911 Reconsideration Order"*); *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, First Report and Order*, 11 FCC Rcd. 18,676, 18,700-02 (1996) (*"E911 First Report and Order"*); *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, Notice of Proposed Rulemaking*, 9 FCC Rcd. 6170, 6180 (1994) (stating that record was "not clear . . . what Commission rules or policies would be *necessary or appropriate* to ensure access to 911 services for TTY-like devices beyond *the general requirement* that services be compatible with such devices").

6 *See* 47 U.S.C. § 255; *Architectural and Transportation Barriers Compliance Board, Telecommunications Act Accessibility Guidelines*, 63 Fed. Reg. 5608 (Feb.

(continued...)

complicating this matter is the Commission's potential attempt to promulgate the "consumer concerns" as technical standards.[7]

The Commission's concern for the absence of digital TTY compatibility is somewhat curious, given that the Commission has supported and, indeed, facilitated the digitalization of wireless technologies and declined to impose stringent technical standards or protocols.[8] At the same time, TTY devices continue to use 1940's technology.[9] As the Forum and Commission studied how to mesh these currently incompatible technologies, broadband PCS carriers, including USWW, have deployed

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6 (...continued)
3, 1998) (to be codified at 36 C.F.R. pt 1193) ("*Access Board Guidelines*"); *see also Implementation of Section 255 of the Telecommunications Act of 1996, Access to Telecommunications Services, Telecommunications Equipment and Customer Premises Equipment by Persons with Disabilities, Notice of Proposed Rulemaking*, WT Docket No. 96-198, FCC 98-55 (rel. April 20, 1998) ("*Section 255 NPRM*").

7 *November 13 Order* at ¶¶ 7, 11; *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, Order*, CC Docket No. 94-102, DA 98-1982, ¶ 8 (rel. September 30, 1998) ("*September 30 Order*"); CTIA/PCIA Joint Comments in CC Docket No. 94-102, filed October 30, 1998, at 2 ("CTIA/PCIA Comments"); Letter from Thomas E. Wheeler, President/CEO, Cellular Telecommunications Industry Ass'n, to Chairman Kennard, dated October 28, 1998, at 2 ("CTIA Letter").

8 *E911 First Report and Order*, 11 FCC Rcd. at 18,747; *Amendment of the Commission's Rules to Establish New Personal Communications Services, Second Report and Order*, 8 FCC Rcd. 7700, 7747 (1993) (*"PCS Second Report and Order"*); *see also Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services Third Report*, FCC 98-91 (rel. June 11, 1998) at 33 (*"Third CMRS Competition Report"*).

9 *See* TTY Forum Quarterly Status Report, filed October 14, 1998 in CC Docket No. 94-102, at 3 ("October Report"); CTIA/PCIA Comments at 4-7; see *also Telecommunications Services for the Deaf and Hearing-Impaired*, 67 FCC 2d 1602, 1603 (1978).

their networks subject to buildout requirements and in compliance with existing technical standards.[10] Consumers have benefited enormously from the competition broadband PCS providers have brought to the CMRS marketplace — a fact the Commission itself has touted.[11] Billions of dollars have now been invested into an embedded base of digital switching equipment, handsets, cell sites and other equipment — all deployed using technologies and digital protocols currently incompatible with existing TTY devices.

Due in large part to industry's good faith efforts throughout this period U S WEST believes that some solutions — primarily long-term data-based solutions — hold promise. By Spring 1998 it was evident that for CDMA carriers, including USWW, a voice-based solution would be simply untenable in the near term, and that efforts should be considered to gauge the feasibility of developing and implementing a so-called "data-based" solution. Still, CDMA-based carriers and manufacturers, through the Forum and CDG, have continued to study the possibility of implementing a short-term solution.[12] Testing recently conducted by Sprint PCS confirms that TTY use over digital technologies results in a CER ranging from 10-15 percent.[13] Thus, the industry's conclusion that "there does not appear to be a voice-based solution in the near future

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10 *See* 47 U.S.C. § 309(j)(3)-(4); 47 C.F.R. § 24.203 (construction requirements).

11 *Third CMRS Competition Report* at 14-22.

12 Testing conducted by USWW's vendor Lucent Technologies in May 1998 indicated a character error rate for its CDMA equipment approaching 9 percent. *See* TTY Forum Quarterly Status Report, filed July 10, 1998 in CC Docket No. 94-102, at App. A.

13 U S WEST believes that Sprint's results are consistent with the performance of USWW's network.

which will allow the Baudot signal of a TTY device to pass through the vocoder of a digital air interface and achieve a character error rate comparable to the character error rate achieved with analog air interface, i.e., less than 1%" is equally applicable to all CDMA carriers today, including USWW. Accordingly U S WEST submits that the Commission should now instead act to facilitate the development of long-term solutions.[14] U S WEST further submits that waiver of Section 20.18(c) for a period sufficient for its vendors to develop such solutions is essential in this regard.

PETITION FOR WAIVER

I. U S WEST HAS TAKEN STEPS TO PROVIDE USERS OF TTY DEVICES WITH THE CAPABILITY TO OPERATE SUCH DEVICES IN CONJUNCTION WITH DIGITAL WIRELESS PHONES

U S WEST is taking substantive steps toward providing users of TTY devices with the capability to operate such devices in conjunction with digital wireless phones. U S WEST will continue to notify customers that TTY devices cannot be used

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[14] *See Access Board Guidelines*, 63 Fed. Reg. at 5620 (Section 255 does not "require obsolete or unmarketable products to be maintained beyond their useful life.").

over its digital network.[15] Currently, however, no commercially viable or reasonably achievable short-term solution is available.

Moreover, U S WEST's ability to effect such a technical solution is necessarily extremely limited. Consistent with prior practice, industry's efforts to develop and study possible digital TTY solutions have been undertaken by manufacturers, trade associations such as CTIA and PCIA, and other industry-based groups. Also, U S WEST is entirely dependent on the availability of equipment and software from its primary vendors to comply with Section 20.18(c) and to obtain the information necessary to provide the information requested in the *November 13 Order.*[16]

Subject to these limitations, U S WEST has attempted to make some preliminary determinations as to which of the various solutions currently before the Commission may be feasible for U S WEST's network and, if feasible, the steps that will be necessary to implement the solution. U S WEST has also participated in PCIA/CTIA

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15 U S WEST has complied with the Commission's notification requirement by providing notice to current and potential subscribers via written publication in its *User Guide.* This notification states:

> **A special note to our customers with speech or hearing difficulties:** At this time, the U S WEST Advanced PCS digital system is not compatible with certain Customer Premises Equipment, such as text Telephone Devices (TTY), used by those with speech or hearing disabilities to communicate by telephone.

This notification is placed in two separate places in the *User Guide*: on the back of the *User Guide* and in the Terms and Conditions section. U S WEST provides the *User Guide* to each subscriber of its services.

16 The Commission has acknowledged carriers' reliance on vendors for compliant equipment and software and granted waivers of the applicable rules. *See Roosevelt County Rural Tel. Coop., Inc. et al.*, 13 FCC Rcd. 22 (1997).

efforts to respond to the Commission's *September 30 Order*.[17] Furthermore, U S WEST also intends to analyze the feasibility of other TTY solutions as they are developed and made available by vendors.

B. Steps Necessary to Bring U S WEST's Network Into Compliance with Section 20.18(c)

The Forum has demonstrated that CDMA technologies pose unique technical obstacles to developing a TTY solution. U S WEST's engineering personnel are evaluating the feasibility of implementing the various data and "voice" solutions currently under consideration at the TTY Forum. U S WEST has formally inquired from its vendors as to the availability of potential solutions and the necessary steps for implementing such a solution. U S WEST also supports and participates in the efforts of the CDG and TTY Forum. It appears, however, that short-term voice-based solutions are neither currently feasible nor readily achievable, and long-term solutions may require expensive, time-consuming and technically complex network changes — which, again, may not be readily achievable. To confirm, the information herein is based on currently available information and material provided by U S WEST's vendors and will be updated as new information becomes available.

1. Problems with CDMA Generally

As CTIA and PCIA have reported to the Commission, the primary cause for incompatibility between TTY devices and CDMA systems is the Frame Erasure Rate

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[17] *See* CTIA/PCIA Comments at App. A.

("FER") of CDMA systems when using voice service.[18] The FER is established in order to maintain the minimum power requirement necessary to balance between capacity and voice quality for voice services. CDMA systems are precisely tuned to operate at an FER of 1 percent. Due to the slow nature of the TTY Baudot signals (180 ms) compared to CDMA frames (20 ms), a 1 percent FER translates into approximately a 7-9 percent CER.[19] U S WEST's vendor, Lucent Technologies, demonstrated this clearly at TTY Forum 5, and the Forum reported this to the Commission on July 10, 1998. As a CDMA carrier, U S WEST has confirmed internally and with vendors that CDG's findings with respect to the feasibility of various digital TTY solutions would be applicable to its network.[20]

2. No Voice-Based Solutions Are Currently Commercially Available

As a practical matter, U S WEST cannot determine the feasibility of these solutions because no commercially viable solution is currently available for analysis. Nevertheless, U S WEST expects that voice-based solutions, whereby the Baudot signal passes through the vocoder, for the reasons discussed above would result in an unacceptably high CER because of the requirement in CDMA to maintain minimum power on both the forward and reverse radio links.

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18 *Id.* at 5.

19 One TTY character spans 9 CDMA voice frames.

20 *See* Attachment A, Declaration of Wayne Leuck, Vice President of Wireless, Engineering and Technology at U S WEST Wireless, LLC.

U S WEST notes that its vendor Qualcomm concurs that these solutions, which generally require direct transmission of Baudot tones over voice sessions, result either in unacceptable CER or would require silicon design changes in the MSM that would take one and one-half to two years to deploy and would adversely affect existing products. Vendor Nortel similarly confirms these problems for CDMA. Nortel further informs U S WEST that most TTY manufacturers have not made their equipment to connect with wireless handsets and that, while some TTY devices have 2.5 mm connections that work to connect the handset using compatible handset bottom port connectors, the lack of a good connection frequently causes an unacceptable CER.[21]

Direct Audio Connection. Some of U S WEST's current handsets support a direct connection using a 2.5 mm jack for direct audio connection. Even where a 2.5 mm jack is supported, however, the vocoders in the handset will not reliably pass the audio tones generated by a TTY device, resulting in an unacceptably high CER. U S WEST thus agrees with the Forum that this solution is not a viable short-term solution and is not currently pursuing this proposed solution.

Acoustic Solution. U S WEST agrees with the Forum that this solution is not a viable short-term solution. As with the direct audio connection, the vocoders in the handset will not reliably pass the audio tones generated by a TTY device, resulting in an unacceptably high CER. U S WEST is therefore not currently pursuing this proposed solution.

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[21] Nortel has indicated the possibility that, in the short term, analog carrier networks could be used for 911 calls by directing users to drop into analog mode for such calls.

RJ-11-Type Modular Connection/Jack and True RJ-11 Connection. Presumably, connecting a TTY device to a CDMA handset using a RJ-11 connection will transmit analog tones. Thus, when a RJ-11 connection is provided to connect an external TTY device to a CDMA handset, the vocoders in the handset will not reliably pass the audio tones generated by a TTY device, resulting in an unacceptably high CER. U S WEST agrees with the Forum that this is not a viable short-term solution. U S WEST is therefore not currently pursuing this as an option.

Proprietary Solutions. By definition, other carriers' proprietary solutions are not available to U S WEST to evaluate and test. U S WEST will evaluate the feasibility of such solutions as they become available to it. U S WEST notes that any proprietary solution would need to be tested against U S WEST's network/infrastructure.

Receiver/Repeater Solution. The receiver-repeater solution proposed by Lucent holds promise and, if feasible, would likely enable customers to use voice-based solutions discussed above. Lucent has reported to TIA that this would result in a CER below 1%. U S WEST cautions, however, that this solution is based only upon simulation results in a lab environment. This proposal requires changes to be made to both U S WEST's network and handsets, including, vocoder modifications in both the network and the handset. Lucent has indicated that the necessary changes in the network will need to be developed internally, after which additional time will be needed for its marketing team to make it commercially available; yet additional time will be required to upgrade vocoders in the network. Furthermore, U S WEST's primary handset vendor Qualcomm has indicated that the vocoders in its handsets are hard-coded and, consequently,

Qualcomm would need to develop a new chipset. Indeed, over 80 percent of all CDMA handsets in the United States use Qualcomm chipsets. Implementing the solution in the network only would result in an acceptable CER in only one direction.

It will also be necessary to find a mobile manufacturer that would agree to implement the receiver/repeater on a terminal. It is our understanding that Lucent has had encouraging discussions with at least one vendor. However, this solution would require additional testing and an analysis has not been produced by the TTY Forum. Furthermore, the availability of this approach is almost entirely dependent on handset vendors. U S WEST will continue to evaluate this potential solution.

3. Long-Term Data-Based Solutions

U S WEST has reviewed the data-based solutions currently before the Commission. As with any solution, U S WEST can definitively determine the feasibility of these solutions for its network only as they become commercially available — a date entirely dependent on vendors.[22] As they are not commercially available, they also are not readily achievable, as required under Section 255.

v.18 IWF Solution. This solution involves the use of an Inter-Working Function ("IWF") platform that converts TTY-generated Baudot signals to ASCII and performs other TTY call functions.[23] According to vendors, this will allow the CDMA

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[22] One vendor has formally informed U S WEST indicated that potential data solutions, including the IS-707, have not matured through the standards process enough to provide a near-term solution.

[23] U S WEST's IWF vendor has indicated that a plan to develop support for TTY will be prepared shortly and may be available by early 1999.

digital air interface in existing networks to serve TTY devices without major modifications to handsets of TTY devices.

There are a number of steps necessary to implement this solution. An IWF solution is not only dependent on the development and installation of appropriate IWF software, but also requires at least one IWF hardware platform for each switch a carrier has in its wireless network. Also, there is no known vendor/manufacturer that is producing the v.18 modem that can be used in an IWF. The impact of the implementing proprietary TTY modem solutions into the IWFs is also unknown. Finally, U S WEST understands that this functionality will not work if a TTY user roamed into another carrier's network, unless that carrier also has a CDMA network with the v.18 IWF solution and allows roaming TTY users access to its IWF for TTY calls. For these reasons, this is not a solution that appears to be readily achievable for U S WEST at this time, but U S WEST will continue to evaluate its potential.

Qualcomm Hybrid Data. This solution is similar to the v.18 solution in that it involves an IWF platform that conveys TTY-generated Baudot signals to the PSAP and performs other TTY call support functions. Qualcomm informs U S WEST that simulations involving transmitting TTY signals as data via its "asynchronous data solution" have resulted in CER approximating those of analog cellular systems. According to Qualcomm, this solution is less susceptible to errors in a mobile environment and leverages existing standards-based connectivity in handsets to provide direct TTY access via a wireless data solution. The viability of this solution depends on factors outside of

U S WEST's control. The caller must use a data-capable TTY or other data-capable input device. In order for the landline party to receive Baudot, carriers must implement an IWF, which converts the data into a Baudot session and similarly transmits received Baudot-based data to the wireless device via the data session.

Data-enabled TTY-capable peripheral devices will need to be developed by TTY vendors. Qualcomm informs U S WEST that it will assist TTY vendors in this effort, and that one vendor is developing data retrofit kits to modify existing TTY devices. Qualcomm cautions that while it anticipates that its handsets will be usable without modification, *further cooperation in developing data-capable TTY devices may reveal unforeseen software requirements for the handset.* In this regard, the TTY user community did not agree on their requirements until September 1998 and it is unclear when TTY manufacturers may develop digital standards and solutions for their own products. In addition, while the use of TTY modems as part of asynchronous data services is already specified in IS-707, U S WEST would need to upgrade its network via software modifications to support TTY modems in the IWF. In this regard, a third party will need to produce this IWF platform. Also, as with the v.18 solution, this solution will require circuit switched data support in all of U S WEST's networks and thus will require costs relating to cell site, switch and handset upgrades. Finally, it is also U S WEST's understanding that a TTY roamer will be subject to the same restrictions as those discussed above for the v.18 solution.

Third Party Gateway. This approach entails providing a TTY-911 user with a number to access an IWF operated by a third party. This IWF would then

complete the call to a landline TTY. U S WEST has not explored this in detail and will continue to participate in Forum efforts to evaluate the viability of this option. Thus, timetables and cost estimates are not presently available.

II. TENTATIVE TIMETABLES

As discussed above, U S WEST is dependent on information currently available from its vendors to determine when potential solutions may become commercially available. U S WEST has formally inquired from its vendors data concerning the commercial availability of these solutions and will provide responsive information on an ongoing basis as deployment timing information becomes available. U S WEST will continue participating with the Forum's testing and related efforts on an ongoing basis and will test the various solutions as they become available.

v.18 IWF Solution. This solution is not currently commercially available. If and when this solution is deemed to be viable and commercially available, Vendor 3Com has informed U S WEST that it intends to develop this feature on its IWF and will provide tentative delivery dates as soon as possible.

Qualcomm Hybrid Data. Qualcomm has stated that it presently intends to roll out data in some existing handsets in December 1998 or January 1999, and in others during the first half of 1999. Qualcomm has also indicated that applicable network/infrastructure-related software changes may be available 3Q99. For carriers who opt to use Qualcomm's solution, the timing of availability to consumers will depend on infrastructure upgrades and data-enabled TTY availability. U S WEST is evaluating the feasibility of Qualcomm's solution. If and when this solution is both viable for

U S WEST's network and commercially available, the tentative timetable for implementing the feature would be approximately 8-12 months. This timetable accounts for the comparison and selection of IWF and v.18 modem card vendors and the selection of suitable locations for the IWF, but U S WEST cautions that the integration and testing of the IWF in U S WEST's network to ensure TTY compatibility may take yet additional time. Again, it is too soon to determine if the Qualcomm solution will be appropriate for U S WEST.

Receiver/Repeater Solution. Lucent informs U S WEST that simulated tests will be conducted through 1998, and the simulation will be implemented by June 1999. Prior to commercial availability, however, Lucent and the mobile vendor must arrive at a business agreement for the solution and implement the solution in products for markets. Until then Lucent indicates that a date for a complete solution cannot be estimated. It is thus too soon to determine if this solution is viable at this time.

III. STEPS TO ADDRESS CONSUMER CONCERNS

Section 20.18 contains all of the Commission's rules regarding 911/TTY compatibility. Furthermore, the Commission has expressly abstained from imposing detailed technical requirements on CMRS providers. In the *November 13 Order*, however, the Commission has elevated the importance of the "consumer concerns" submitted to the Forum by its consumer representatives,[24] requiring carriers to "specify with sufficient particularity" the "reasonable steps the carrier will take to address the

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[24] *September 30 Order at* App. A.

consumer concerns referenced in the *September 30 Order*" in order to obtain a Section 20.18(c) waiver.[25] The Commission has *not* put the consumer concerns on public notice and has *not* amended its rules and U S WEST hereby reserves the right to challenge such action if the Commission deems the consumer concerns to be technical standards with which carriers must comply. Nevertheless, for informational purposes, U S WEST below discusses the extent to which possible TTY solutions address the consumer concerns.

As the Commission is aware from the most recent Forum report, industry has determined that the various voice- and data-based solutions support the consumer concerns in varying degrees.[26] Based on Forum reports, it appears that the proposed data-based solutions which may be feasible for U S WEST's network support most of the consumer concerns, and Lucent's receiver/repeater solution also holds promise. U S WEST cautions, however, that additional testing may be required to confirm the extent to which the consumer concerns are supported.[27]

v.18 IWF Solution. It is U S WEST's understanding that this method may meet all consumer concerns except # 9 — Voice Carryover (VCO) during a 911 call. The feasibility of adding this feature has yet to be determined. U S WEST will report on the feasibility of adding this feature in later updates as such information becomes available.

Qualcomm Hybrid Data. It is U S WEST's understanding that this method may meet all consumer concerns except # 9 — Voice Carryover (VCO) during a

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25 *November 13 Order* at ¶¶ 10-11.

26 *See* TTY Forum Workplan at 11-17.

27 *See id.*

911 call. In addition, while signal volume control is not applicable to data service calls, ringer volume control is already implemented in Qualcomm handsets and voice volume control is under investigation for 1999. The feasibility of adding this feature has yet to be determined. Also, as discussed above, a data-compatible TTY device will be needed, but broad-based wireline TTY support is anticipated, depending on IWF implementation. U S WEST will report on the feasibility of adding this feature in later updates as information becomes available.

Receiver/Repeater Solution. To date, U S WEST has been unable to effectively evaluate how well this approach would address the consumer requirements, and the Forum has yet to produce such an analysis. However, there are preliminary indications that it may support all of the thirteen criteria. In this regard, provided that a handset-based approach would be used, U S WEST has been informed that the Nortel switch may implicate only items 2, 11 and 13 (respectively, call progress, ANI/ALI, and drive conditions/handoffs) and that it appears that the switch currently supports these requirements. Nortel emphasizes, however, the remaining requirements would be radio interface related and thus dependent on the capabilities of handset vendors.

Third Party Gateway. It is U S WEST's understanding that this solution may meet most, but not all criteria. Importantly, it is undetermined whether a CER of less than 1% can be achieved; whether VCO and HCO can be supported; and whether drive conditions can be supported. It is also U S WEST's understanding that ANI and ALI cannot be passed, and that a TTY user cannot visually monitor all aspects of a call.

IV. SECTION 255 PROHIBITS THE COMMISSION FROM IMPOSING DIGITAL TTY REQUIREMENTS ON WIRELESS CARRIERS BECAUSE SUCH CAPABILITIES ARE NOT YET READILY ACHIEVABLE

Throughout the proceeding, the Commission has relied on the Americans with Disabilities Act ("ADA") as a principal basis for its wireless TTY requirement.[28] Section 255 of the Act — on which the Commission also relies — further specifies wireless carriers' obligations regarding access to the disabled.[29] Indeed, Section 255 clearly applies to digital TTY compatibility, as a provider must "ensure that [its] service is compatible with *existing peripheral devices or specialized customer premises equipment commonly used by individuals with disabilities* to achieve access, *if readily achievable.*"[30] TTY/digital compatibility is therefore clearly an access issue which Congress expressly intended be governed by Section 255.

The Commission has not yet acknowledged, however, the limits on its authority under Section 255. Importantly, both the ADA and Section 255 limit the Commission to requiring carriers to take appropriate compliance measures where "readily achievable."[31] "Readily achievable," in turn, is the ADA's definition of that term as "easily accomplishable and able to be carried out without much difficulty or expense"

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28 *See E911 Reconsideration Order* at 22,686; *E911 First Report and Order,* 11 FCC Rcd. at 18,699; *E911 NPRM,* 9 FCC Rcd. at 6180, n.55.

29 *See E911 Reconsideration Order* at 22,687; *E911 First Report and Order,* 11 FCC Rcd. at 18,699.

30 47 U.S.C. § 255(d) (emphasis added). Moreover, the Access Board has already determined that specialized customer premises equipment may include TTY devices. *Access Board Guidelines,* 63 Fed. Reg. at 5615-16.

31 47 U.S.C. § 255(c).

taking into account factors relating to the nature and cost of the action.[32] The Commission has proposed a three-step inquiry for determining "whether a particular telecommunications access feature" is "readily achievable: (1) is the feature feasible? (2) if so, what would be the expense of providing the feature? and (3) given its expense, is the feature practical?[33] By this standard, and any reasonable interpretation of Section 255, digital/TTY compatibility is not readily achievable by January 1, 1999, and will not be readily achievable for some period of time thereafter.

Furthermore, the Access Board has determined that its guidelines are "'prospective in nature', intended to apply to future products."[34] Indeed, the Commission itself has echoed that sentiment, tentatively concluding that:

> [O]nce a product is introduced in the market without accessibility features that were not readily achievable at the time, Section 255 *does not require that the product be modified to incorporate subsequent, readily achievable access features.*[35]

As discussed herein, compliance with the TTY obligation is not readily achievable and the Commission may not require U S WEST to have such capability until it is readily achievable.

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32 *See* 42 U.S.C. § 12181(9), 47 U.S.C. § 255(a)(2).

33 *Section 255 NPRM* at ¶ 100.

34 *Access Board Guidelines,* 63 Fed. Reg. at 5612.

35 *Section 255 NPRM* at ¶ 120 (emphasis added); *see also Access Board Guidelines,* 63 Fed. Reg. at 5612.

V. GOOD CAUSE EXISTS FOR THE WAIVER

Waiver of the Commission's rules is warranted where special circumstances warrant a deviation from the general rule and such deviation will serve the public interest.[36] For the reasons discussed herein, such circumstances clearly are present here and the public interest will be served by waiver grant.[37] Users of TTY devices may continue to use analog wireless technologies, and U S WEST will continue to notify consumers of the need to use to analog technologies until a digital solution is implemented.

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36 *See Northeast Cellular Tel. Co., L.P. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990); *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969).

37 *See Roosevelt County Rural Tel. Coop., Inc. et al.*, 13 FCC Rcd. at 42; *see also* 47 C.F.R. § 24.819 (waiver may be warranted where "unique facts and circumstances of a particular case render application of the rule inequitable, unduly burdensome or otherwise contrary to the public interest" and where there is "lack of a reasonable alternative.")

CONCLUSION

For the foregoing reasons, U S WEST respectfully requests that the Commission grant the instant petition for waiver of Section 20.18(c) until a long-term TTY solution is readily achievable and implemented.

Respectfully submitted,

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Its Attorney

Of Counsel
Daniel L. Poole
U S WEST, Inc.
1801 California Street, Room 5100
Denver, CO 80202

December 4, 1998

Attachment A

DECLARATION/VERIFICATION

I, Wayne A. Leuck, state as follows:

1. I am Vice President of Wireless, Engineering and Technology at U S WEST Wireless, LLC.

2. As such, I am familiar with the U S WEST Wireless, LLC's efforts to comply with Section 20.18(c) of the Federal Communications Commission's rules and with the subject matter of the attached Petition for Waiver.

3. I have read the foregoing Petition for Waiver and the facts and statements contained therein are true and correct to the best of my knowledge, information and belief.

Wayne A. Leuck

Dated: December 3, 1998